STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
dnr.mo.gov

November 1, 2013

Mr. Gary Claspill
Office of Administration
P.O. Box 809
Jefferson City, MO 65102

Dear Permittee:

Missouri State Operating Permit MO-0093556 issued on June 2, 2009 is hereby modified as per the enclosed. This modification is to add ultraviolet disinfection, second final clarifier, and chemical to facilitate phosphorus removal, and remove the existing chlorination system.

Please read your permit and enclosed Standard Conditions. They contain important information on monitoring requirements, effluent limitations, sampling frequencies and reporting requirements.

This permit is both your Federal Discharge Permit and your new State Operating Permit and replaces all previous State Operating Permits for this facility. In all future correspondence regarding this facility, please refer to your State Operating Permit number and facility name as shown on page one of the permit.

Please be aware that nothing in this permit relieves the permittee of any other legal obligations or restrictions, such as other federal or state laws, court orders, or county or other local ordinances or restrictions.

If you were adversely affected by this decision, you may be entitled to an appeal before the administrative hearing commission pursuant to 10 CSR 20-1.020 and Section 621.250, RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission. Any appeal shall be directed to: Administrative Hearing Commission, Truman Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, MO 65102, Phone: 573-751-2422, Fax: 573-751-5018, website: www.oa.mo.gov/ahc.

If you have any questions concerning this permit please contact Mr. Sieu T. Dang, P.E., of my staff by calling 417-891-4300 or via mail at Southwest Regional Office, 2040 W. Woodland, Springfield, MO 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE

Cynthia S. Davies
Regional Director

CSD/sdk

Enclosures

c: Mr. Larry Trap, Plant Maintenance Engineer, MDOC-Ozark Correctional Center, 929 Honor Camp Lane, Fordland, MO 65652

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0093556
Owner:	Office of Administration FMDC
Address:	P.O. Box 809, Jefferson City, MO 65102
Continuing Authority:	Same as Above
Address:	Same as Above
Facility Name:	Ozark Correctional Center WWTF
Facility Address:	929 Honor Camp Lane, Fordland MO 65652
Legal Description:	See page 2
UTM (X/Y):	See page 2
Receiving Stream:	Davis Branch (C)
First Classified Stream and ID:	Davis Branch (C) (02358)
USGS Basin & Sub-watershed No.:	(11010002-0203)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 - Prison / Sewerage Works - SIC #9223 / 4952

The use or operation of this facility shall be by or under the supervision of a Certified "B" Operator

Extended aeration / chemical addition to facilitate phosphorus removal / ultraviolet light disinfection / mechanical sludge dewatering / sludge disposal at landfill

Design organic population equivalent is 920
Design flow is 0.092000 MGD
Design sludge production is 16.5 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

June 2, 2009 — Effective Date
November 1, 2013 — (Revised)

Sara Parker Pauley, Director, Department of Natural Resources

June 1, 2014 — Expiration Date

Cynthia S. Davies, Regional Director, Southwest Regional Office

Treatment Facility
Legal Description: SE¼, SW¼, Sec. 02, T28N, R18W, Webster County
UTM (X/Y): 510952 / 4111859

Outfall #001
Legal Description: NW¼, NW¼, Sec. 14, T28N, R18W, Webster County
UTM (X/Y): 510412 / 4109100

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/month**	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L		45	30	once/month**	****
Total Suspended Solids	mg/L		45	30	once/month**	****
pH – Units	SU	***		***	once/month**	grab
E. coli (Note 1)	#/100 ml	126		126	once/month**	grab
Total Phosphorus as P	mg/L	*		0.5	once/month**	grab
Ammonia as N (October 1 – March 31) (April 1 – September 30)	mg/L	 7.5 3.7		 2.9 1.4	once/month**	grab
Oil and Grease	mg/L	15		10	once/month**	grab
Nitrate as Total NO_3	mg/L	*		*	once/month**	grab
Aluminum, Total Recoverable (Note 2)	µg/L	750		370	once/month**	grab

MONITORING REPORTS SHALL BE SUBMITTED Monthly; THE FIRST REPORT IS DUE **December 28, 2013**. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions #10	once / permit cycle	24 hour composite

MONITORING REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE. THE FIRST REPORT IS DUE January 28, 2013

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** Reports shall be submitted by the 28th day of the month following the reporting period, e.g. Reporting period is the month of March (samples collected monthly), report due by April 28th.

*** pH is measured in pH units and is not to be averaged. The pH for all facilities except lagoons is limited to the range of 6.5-9.0 pH units.

**** A composite sample made up from a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab sample. A person may physically collect the four grab samples or a composite sampler may be set up to collect the four grab samples.

Note 1 – Final effluent limits of 126 cfu per 100 ml daily maximum and monthly average applicable year round due to discharging within 1.75 miles of a losing stream.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 2 - If no Aluminum or Iron was used in a given sampling period, an actual analysis is not necessary. Simply report as "0 mg/L".

C. INFLUENT MONITORING REQUIREMENTS

The facility is required to meet a removal efficiency of **85%** or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:

SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Influent			
Biochemical Oxygen Demand$_5$	mg/L	once / month**	modified composite****
Total Suspended Solids	mg/L	once /month**	modified composite****

MONITORING REPORTS SHALL BE SUBMITTED Monthly; THE FIRST REPORT IS DUE **December 28, 2013**.

C. INFLUENT MONITORING REQUIREMENTS (continued)

** Reports shall be submitted by the 28th day of the month following the reporting period, e.g. Reporting period is the month of March (samples collected monthly), report due by April 28th.

**** A composite sample made up from a minimum of four grab samples collected within a 24-hour period with a minimum of two hours between each grab sample. A person may physically collect the four grab samples or a composite sampler may be set up to collect the four grab samples.

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:

   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

      (2) controls any pollutant not limited in the permit.

   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.

   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.

D. SPECIAL CONDITIONS (continued)

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

(1) One hundred micrograms per liter (100 µg/L);

(2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

(3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;

(4) The level established in Part A of the permit by the Director.

(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards

(a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.

(b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

(1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;

(2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

(3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;

(4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;

(5) There shall be no significant human health hazard from incidental contact with the water;

(6) There shall be no acute toxicity to livestock or wildlife watering;

(7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;

(8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report on **January 28** each year to the Southwest Regional Office which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

D. SPECIAL CONDITIONS (continued)

8. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

9. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b.

10. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	%		24 hr. composite*	Any

* A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampler.

(a) Test Schedule and Follow-Up Requirements

(1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.

(i) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.

(ii) Samples submitted for analysis of stormwater discharges shall be collected as a grab.

(iii) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.

(iv) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.

(v) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.

(vi) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

(vii) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.

(viii) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.

(ix) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.

(x) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.

(xi) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.

(xii) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

(xiii) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.

(2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:

D. SPECIAL CONDITIONS (continued)

(i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
(ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(4) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

(5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(6) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(b) PASS/FAIL procedure and effluent limitations:

(1) To pass a multiple-dilution test:

(i) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; **OR**,

(ii) For facilities with an AEC greater than 30%, the LC50 concentration must be greater than 100%; **AND**,

(iii) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required.

(c) Test Conditions

(1) Test Type: Acute Static non-renewal

(2) All tests, including repeat tests for previous failures, shall include both test species listed below.

(3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.

(4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.

(5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(6) Unless otherwise specified above, multiple-dilution tests will be run with:

(i) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;

(ii) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(iii) Reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

(8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

D. SPECIAL CONDITIONS (continued)

SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls

Missouri Department of Natural Resources
Statement of Basis
Ozark Correctional Center WWTF
MSOP #: MO-0093556
Webster County

A Statement of Basis (Statement) gives pertinent information regarding the applicable regulations and rationale for the development of the NPDES Missouri State Operating Permit (operating permit). This Statement includes Wasteload Allocations, Water Quality Based Effluent Limitations, and Reasonable Potential Analysis calculations as well as any other calculations that effect the effluent limitations of this operating permit. This Statement does not pertain to operating permits that include sewage sludge land application plans and variance procedures, and does not include the public comment process for this operating permit.

A Statement is not an enforceable part of an operating permit.

Plans and specifications for this facility is being reviewed under construction permit number CP0001030 by the Department of Natural Resources. The design engineer, a registered Missouri professional engineer, has certified that the plans and specifications meet all requirements of 10 CSR 20-Chapter 8 Waste Treatment Design.

Part I – Facility Information

Facility Type: (POTW)
Prison / Sewerage Works - SIC #9223 / 4952

Extended aeration / chemical addition to facilitate phosphorus removal / ultraviolet light disinfection / mechanical sludge dewatering / sludge disposal at landfill

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.14	Secondary	Domestic	Direct discharge

Receiving Water Body's Water Quality & Facility Performance History:

The facility discharges to a gaining segment of Davis Branch. The facility has reported multiple total phosphorus exceedances in 2009, 2010, and 2011 on their discharge monitoring reports.

This is for a modification to add ultraviolet disinfection, second final clarifier, and chemical to facilitate phosphorus removal, and to remove the existing chlorination system.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Check boxes below that are applicable to the facility;

- Population Equivalent greater than two hundred (200): ☒
- Fifty (50) or more service connections: ☐

- Owned or operated by or for:
  - Municipalities ☐
  - Public Sewer District: ☐

- County ☐
- Public Water Supply Districts: ☐
- Private sewer company regulated by the Public Service Commission: ☐
- State or Federal agencies: ☒

- Department required: ☐
  The Department requires this facility to retain the services of a certified operator due to:

This facility currently requires an operator with a B Certification Level. Please see **Appendix A - Classification Worksheet**. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: Steve Young
Certification Number: 10139
Certification Level: C

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

☒ - This facility does not currently retain an operator with the correct level of certification required to operate the wastewater treatment facility. Missouri Clean Water Law and its implementing regulation 10 CSR 20-9.020(2)(F) allows the Department to develop a schedule of activities including the date by which compliance shall be obtained.

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☐
Lake or Reservoir [10 CSR 20-7.015(3)]: ☐
Losing [10 CSR 20-7.015(4)]: ☒
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☐
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☒

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Davis Branch	C	02358	General Criteria, LWW, AQL, WBC-B	11010002	Ozark / White

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND).
** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Davis Branch	0.0	0.0	0.1

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(a)]			ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(II)(b)]		
1Q10	7Q10	30Q10	1Q10	7Q10	30Q10
0	0	0	0	0	N/A

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ☒;
The facility is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

☒ - All limits in this statement are at least as protective as those previously established; therefore, backsliding does not apply.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(8)(A)10.], when a Continuing Authority under paragraph 10 CSR 20-6.010(3)(B)1. or 2. is expected to be available for connection within the next five (5) years, any operating permit issued to a permittee under this paragraph, located within the service area of the paragraph (3)(B)1. or 2. facility, shall contain the following special condition… This language is contained in Special Condition #3 of this operating permit.

ANTIDEGRADATION:
Policies which ensure protection of water quality for a particular water body where the water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as outstanding natural resource waters. Antidegradation requirements are consistent with 40 CFR 131.12 that outlines methods used to assess activities that may impact the integrity of a water and protect existing uses. This policy may compel the state to maintain a level of water quality above those mandated by criteria.

Applicable ☒;

Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

APPLICABLE PERMIT PARAMETERS:
Effluent parameters for conventional, non-conventional, and toxic pollutants have been obtained from the previous NPDES operating permit for this facility, technology based effluent limits, and from appropriate sections of the renewal application.

Bio-solids, Sludge, & Sewage Sludge:
Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: http://dnr.mo.gov/env/wpp/pub/index.html, items WQ422 through WQ449.

☒ - Not applicable;
This condition is not applicable to the permittee for this facility.

COMPLIANCE AND ENFORCEMENT:
Action taken by the Department to resolve violations of the Missouri Clean Water Law, its implementing regulations, and/or any terms and condition of an operating permit.

Not Applicable ☒;
The permittee/facility is not under enforcement action and is considered to be in compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and condition of an operating permit.

PRETREATMENT PROGRAM:
The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Not Applicable ☒;
The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):
Limitations must control all pollutants or pollutant parameters that are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above the Missouri Water Quality Standards.

Not Applicable ☒;
A RPA was not conducted for this facility.

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs). Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm

Applicable ☒;
Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSOS), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:
Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

☒ - In accordance with Missouri RSMo §644.026.1.(15) and 40 CFR Part 122.41(e), the permittee is required to develop and/or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance. In addition, the Department considers the development of this program as an implementation of this condition. Additionally, 40 CFR Part 403.3(o) defines a POTW to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant.

At this time, the Department recommends the US EPA's Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002). The CMOM identifies some of the criteria used by the EPA to evaluate a collection system's management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Not Applicable ☒;
This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* [EPA 832-R-92-006] (Storm Water Management), BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure.

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Not Applicable ☒;
At this time, the permittee is not required to develop and implement a SWPPP.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined to total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ☒;
Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
C_s = upstream concentration
Q_s = upstream flow
C_e = effluent concentration
Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":
Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment

performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:

Not Applicable ☒;
A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:
A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable ☒;
Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing are also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following RSMo apply: §644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; §644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and §644.051.5 is the basic authority to require testing conditions. WET test will be required by <u>all</u> facilities meeting the following criteria:
☐ Facility is a designated Major.
☐ Facility continuously or routinely exceeds its design flow.
☐ Facility (industrial) that alters its production process throughout the year.
☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☒ Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
☐ Other – please justify.

40 CFR 122.41(m) - Bypasses:
The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from "bypassing" untreated or partially treated sewage (wastewater) beyond the headworks. A bypass, which includes blending, is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR

122.41(l)(6) and per Missouri's Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar.

☒ - Not Applicable, this facility does not bypass.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Not Applicable ☒;
This facility does not discharge to a 303(d) listed stream.

Adjusted Design Flow:
10 CSR 20-6.011(1)(B)1. provides for an Adjusted Design Flow when calculating permit fees on human sewage treatment facilities. If the average flow is sixty percent (60%) or less than the system's design flow, the average flow may be substituted for the design flow when calculating the permit fee on human sewage treatment facilities. If the facility's actual average flow is consistently 60% or less than the permitted design flow, the facility may qualify for a reduction in your fee when:

- The facility has a valid permit, or has applied for re-issuance, is in compliance with the terms, conditions and effluent limitations of the permit, and the facility has a good compliance history; and

- Flow is not expected to exceed 60% of design flow for the remaining term of the existing operating permit.

Not Applicable ☒;
Municipalities, POTWs, and Industrials do not qualify for Adjusted Design flows.

Outfall #001 – Main Facility Outfall
EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	MGD	1	*		*	YES	24. HR ESTIMATE
BOD_5	MG/L	6		45	30	NO	S
TSS	MG/L	6		45	30	NO	S
PH (S.U.)	SU	6	6.5-9.0		6.5-9.0	YES	6.0-9.0
AMMONIA AS N (OCTOBER - MARCH)	MG/L	6	7.5		2.9	YES	*
AMMONIA AS N (APRIL - SEPTEMBER)	MG/L	6	3.7		1.4	YES	*
ESCHERICHIA COLI	***	6	126		126	YES	NONE
FECAL COLIFORM	***	--	REMOVE		REMOVE	YES	1000/400
CHLORINE, TOTAL RESIDUAL	MG/L	--	REMOVE		REMOVE	YES	1.0/1.0
TEMPERATURE	OC	--	REMOVE		REMOVE	YES	*
DISSOLVED OXYGEN	MG/L	6	*		*	NO	S
TOTAL PHOSPHORUS	MG/L	6	*		0.5	NO	S
OIL & GREASE	MG/L	6	15		10	YES	*
ALUMINUM, TOTAL RECOVERABLE	MG/L	6	0.75		0.37	YES	NONE
NITRATE AS TOTAL NO_3	MG/L	6	*		*	YES	NONE
WHOLE EFFLUENT TOXICITY (WET) TEST	Please see WET Test in the Derivation and Discussion Section below.						
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

<u>* - Monitoring requirement only</u>
*** - # of colonies/100mL; the Monthly Average for E. coli is a geometric mean.
**** - Parameter not previously established in previous state operating permit.
N/A – Not applicable
S – Same as previous operating permit

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Antidegradation Policy
7. Water Quality Model
8. Best Professional Judgment
9. TMDL or Permit in lieu of TMDL
10. WET test Policy
11. Dissolved Oxygen Policy

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

<u>Flow</u>. Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS**.

Biochemical Oxygen Demand (BOD_5). Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

Total Suspended Solids (TSS). Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

pH. Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

Temperature. Temperature has been removed because it is no longer pertinent in determining ammonia limitations.

Ammonia as N. Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

Fecal Coliform. *E. coli* has replaced fecal coliform at the applicable bacteria criteria in Missouri's water quality standards.

Escherichia coli (E. coli). Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

Total Residual Chlorine (TRC). TRC limits have been removed as ultraviolet light disinfection will replace the existing chlorination system for disinfection.

Total Phosphorus. Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

Total Nitrogen. Monitoring for Total Nitrogen is not required at this time due to Nutrient Implementation Plan for discharges in Lake watersheds has not been implemented.

Nitrate as Total NO_3. Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

Dissolved Oxygen. Monitoring is typically required for facilities with chlorination/dechlorination system. Monitoring requirement was removed since the facility now uses ultraviolet lights for disinfection.

Oil & Grease. Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

Aluminum, Total Recoverable: Please see **APPENDIX B – ANTIDEGRADATION ANALYSIS.**

WET Test. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring.* It is recommended that WET testing be conducted during the period of lowest stream flow.

☒ Acute

☒ No less than **ONCE/PERMIT CYCLE:**

- ☒ Municipality or domestic facility with a design flow ≥ 22,500 gpd, but less than 1.0 MGD.
- ☐ Other, please justify.

Allowable Effluent Concentration (AEC) calculations determine if the facility is to conduct single dilution or multiple dilution WET testing. Facilities that discharge to unclassified or Class C receiving streams, the AEC%

is 100%. Facilities with less than 100% for an AEC% will have multiple dilution WET testing. Facilities that discharge to Lakes and have Acute WET testing, the AEC% is 100% due to [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] ZID not allowed for Lakes.

Minimum Sampling and Reporting Frequency Requirements.

PARAMETER	SAMPLING FREQUENCY	REPORTING FREQUENCY
FLOW	MONTHLY	MONTHLY
BOD_5	MONTHLY	MONTHLY
TSS	MONTHLY	MONTHLY
PH	MONTHLY	MONTHLY
AMMONIA AS N	MONTHLY	MONTHLY
E. COLI	MONTHLY	MONTHLY
DISSOLVED OXYGEN	MONTHLY	MONTHLY
OIL & GREASE	MONTHLY	MONTHLY
TOTAL PHOSPHORUS	MONTHLY	MONTHLY
ALUMINUM, TOTAL RECOVERABLE	MONTHLY	MONTHLY
NITRATE, TOTAL NO_3	MONTHLY	MONTHLY

Sampling Frequency Justification:

Monthly sampling is required for all parameters as per the current permit.

The Clean Water Commission has directed the Department to proceed with amending 10 CSR 20-7.015 to reduce the sampling frequency required for E.coli to a lesser frequency, still protective of water quality standards, for smaller facilities, including those with discharges of 100,000 gallons per day or less. Therefore, monthly sampling for E. Coli is required at this time.

Sampling Type Justification

The same as the previous operating permit.

Part V –2013 Water Quality Criteria for Ammonia

Upcoming changes to the Water Quality Standard for ammonia may require significant upgrades to wastewater treatment facilities.

On August 22, 2013, the U.S. Environmental Protection Agency (EPA) finalized new water quality criteria for ammonia, based on toxicity studies of mussels. Missouri's current ammonia criteria are based on toxicity testing of several species, but did not include data from mussels. Missouri is home to 65 of North America's mussel species, which are spread across the state. According to the Missouri Department of Conservation nearly two-thirds of the mussel species in Missouri are considered to be "of conservation concern". Nine species are listed as federally endangered, with an additional species currently proposed as endangered and another species proposed as threatened.

The adult forms of mussels that are seen in rivers, lakes, and streams are sensitive to pollutants because they are sedentary filter feeders. They vacuum up many pollutants with the food they bring in and cannot escape to new habitats, so they can accumulate toxins in their bodies and die. But very young mussels, called glochidia, are exceptionally sensitive to ammonia in water. As a result of a citizen suit, the EPA was compelled to conduct toxicity testing and develop ammonia water quality criteria that would be protective if young mussels may be present in a waterbody. These new criteria will apply to any discharge with ammonia levels that may pose a reasonable potential to violate the standards. Nearly all discharging domestic wastewater treatment facilities (cities, subdivisions, mobile home parks, etc.), as well as certain industrial and stormwater dischargers with ammonia in their effluent, will be affected by this change in the regulations.

When new water quality criteria are established by the EPA, states must adopt them into their regulations in order to keep their authorization to issue permits under the National Pollutant Discharge Elimination System (NPDES). States are required to review their water quality standards every three years, and if new criteria have been developed they must be adopted. States may be more protective than the Federal requirements, but not less protective. Missouri does not have the resources to conduct the studies necessary for developing new water quality standards, and therefore our standards mirror those developed by the EPA; however, we will utilize any available flexibility based on actual species of mussels that are native to Missouri and their sensitivity to ammonia.

Many treatment facilities in Missouri are currently scheduled to be upgraded to comply with the current water quality standards. But these new ammonia standards may require a different treatment technology than the one being considered by the permittee. It is important that permittees discuss any new and upcoming requirements with their consulting engineers to ensure that their treatment systems are capable of complying with the new requirements. The Department encourages permittees to construct treatment technologies that can attain effluent quality that supports the EPA ammonia criteria.

Ammonia toxicity varies by temperature and by pH of the water. Assuming a stable pH value, but taking into account winter and summer temperatures, Missouri includes two seasons of ammonia effluent limitations. Typical effluent limits for ammonia for a facility in a location such as this, under current regulations, with no mixing available, would be:

Summer – 3.6 mg/L daily maximum, 1.4 mg/L monthly average.
Winter – 7.5 mg/L daily maximum, 2.9 mg/L monthly average.

Under the new EPA criteria, where mussels of the family Unionidae are present or expected to be present, your estimated effluent limitations will be:

Summer – 1.7 mg/L daily maximum, 0.6 mg/L monthly average.
Winter – 5.6 mg/L daily maximum, 2.1 mg/L monthly average.

Actual effluent limits will depend in part on the actual performance of the facility.

Operating permits for facilities in Missouri must be written based on current statutes and regulations. It is expected that the new WQS will be adopted in the next review of our standards. Therefore permits will be written with the existing effluent limitations until the new standards are adopted. To aid permittees in decision making, an advisory will be added to permit Fact Sheets notifying permittees of the expected effluent limitations for ammonia. When setting schedules of compliance for ammonia effluent limitations, consideration will be given to facilities that have recently constructed upgraded facilities to meet the current ammonia limitations.

For more information on this topic feel free to contact the Missouri Department of Natural Resources, Water Protection Program, Water Pollution Control Branch, Operating Permits Section at (573) 751-1300.

Part VI: Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

☒ Not Applicable; This is a permit modification after construction. The Department is not required to determine findings of affordability because the permit contains no new conditions or requirements that convey a new cost to the facility.

Part VII – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain

effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the department to explore a watershed based permitting effort at some point in the future.

PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ - The Public Notice period for this operating permit was from August 12, 2011 to September 11, 2012. No responses received.

Date of Factsheet: August 9, 2011 ; revised October 7, 2013

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Appendix A

10 CSR 20-9.020
All wastewater treatment systems serving a population equivalent greater than two hundred (200) or with fifty (50) or more service connections, owned or operated by or for municipalities, public sewer districts, counties, public water supply districts, private sewer companies regulated by the Public Service Commission and the state or federal agencies.

Column A

Item	Points	Points Assigned
Maximum population equivalent (P.E.) served, peak day	1 pt. Per 10,000 PE or major fraction thereof	
Design flow (avg. day) or peak month's flow, (avg. day) whichever is larger	Maximum: 10 Points 1 pt. Per MGD or major fraction thereof	
REQUIRED LABORATORY CONTROL Performed by plant personnel (highest level only)		
Lab work done outside the plant	0	
Push – button or visual methods for simple tests such as pH, settleable solids	3	
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	5
More advanced determinations such as BOD seeding procedure, fecal coliform, nutrients, total oils, phenols, etc.	7	
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	
TOTAL Page 1 Column A		**5**

Column B

Item	Points	Points Assigned
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY		
Missouri or Mississippi River	0	
All other stream discharges except to losing streams and stream reaches supporting whole body contact reaction	1	
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
HEADWORKS - PRELIMINARY TREATMENT		
Raw wastes subject to toxic waste discharges	6	
Screening and/or comminution	3	3
Grit removal	3	
Plant pumping of main flow (If 51% or greater flow comes into plant)	3	5
PRIMARY TREATMENT		
Primary clarifiers (Flow EQ basins)	5	
Combined sedimentation/digestion (includes big septic tank or if cities clean out STEP system)	5	
Chemical addition (except chlorine, enzymes)	4	
TOTAL Page 1 Column B		**11**

Column A		
Item	**Points**	**Points Assigned**
Direct reuse or recycle of effluent	6	
Land Disposal – Low rate (Irrigation) < 24" year	3	
Land Disposal – High rate (Irrigation) > 24" year	5	
Overland flow	4	
Variation in Raw Wastes (highest level only) (DMR exceedances & Design Flow exceedances)		
Variations do not exceed those normally or typically expected	0	
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow (use design flow for determination)	2	
Recurring deviations or excessive variations of more than 200 percent in strength and/or flow (use design flow for determination)	4	
SOLIDS HANDLING - SLUDGE		
Thickening (Lagoon sludge holding basin)	5	
Anaerobic digestion	10	
Aerobic digestion	6	
Evaporative sludge drying	2	
Mechanical dewatering (belt thickeners)	8	8
Solids reduction (incineration, wet oxidation, composting)	12	
Land application	6	
TOTAL Page 2 Column A		**8**
Grand Total		**53**

Column B		
Item	**Points**	**Points Assigned**
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers (recirculating sand filters)	10	
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	15
Stabilization ponds without aeration	5	
Aerated lagoon (Lemna)	8	
Advanced Waste Treatment Polishing pond (Lemna)	2	
Chemical/physical – without secondary (carbon filters such as at Wilson's Creek WWTF)	15	
Chemical/physical – following secondary (adding alum if not at headworks, tertiary filters)	10	10
Biological or chemical biological (multi stage biological treatment, SBR and 3-phase biological treatment)	12	
Carbon Regeneration	4	
DISINFECTION		
Chlorination or comparable	5	
Dechlorination	2	
On-site generation of disinfectant (ozone)	5	
Ultraviolet light	4	4
TOTAL Page 2 Column B		**29**

Level of Certification Required

D	C	B	A
≤ 25	26 – 50	51 – 70	≥71

PREPARED BY:

Sieu T. Dang (Name) 8/9/2011 (Date)

APPENDIX B – ANTIDEGRADATION ANALYSIS:

STATE OF MISSOURI Jeremiah W. (Jay) Nixon, Governor Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
dnr.mo.gov

FEB - 3 2011

Office of Administration
Division of Facilities Management, Design and Construction
ATTN: Mr. Gary Claspill
730 Truman Building, 301 West High Street
PO Box 809
Jefferson City, MO 65102

RE: Water Quality and Antidegradation Review Preliminary Determination on *Antidegradation Report for Ozark Correctional Center, MO-0093556.*

Dear Mr. Claspill:

Enclosed please find the finalized Water Quality and Antidegradation Review (WQAR) for the Ozark Correctional Center Wastewater Treatment Facility (WWTF) in Webster County. The WQAR contains pertinent antidegradation review information based on the use of existing water quality, effluent limitations and monitoring requirements for the facility discharge. It was developed in accordance with 10 CSR 20-7.031, the Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (AIP) dated May 7, 2008, U.S. Environmental Protection Agency (US EPA) guidance, the applicant-supplied antidegradation review documentation, and the State of Missouri's effluent regulations (10 CSR 20-7.015). Please refer to the *General Assumptions of the Water Quality and Antidegradation Review* section of the enclosed WQAR. The WQAR is preliminary and subject to change as new information becomes available during future permit application processing.

Based on the Missouri Department of Natural Resources' (Department's) initial review, preliminary determination is that the applicant-supplied antidegradation review documentation satisfies the requirements of the AIP. This WQAR/preliminary determination may be appealed within 30 days of this letter in accordance with the AIP Section II.F.4.

You may proceed with submittal of an application for an operating permit and antidegradation review public notice, an engineering report, or a complete application for a construction permit. These submittals must reflect the design flow, facility description, and general treatment components of this WQAR or this preliminary determination may have to be revisited.

Following the Department's public notice of draft Missouri State Operating Permit including the antidegradation review findings and preliminary determination, the Department will review any public notice comments received. If significant comments are made, the project may require another public notice and potentially another antidegradation review. If no comments are received or comments are resolved without another public notice, these findings and determinations will be considered final.

Following issuance of the construction permit and completion of the actual facility construction, the Department will proceed with the issuance of the operating permit.

If you should have questions regarding the enclosed WQAR, please contact Leasue Meyers by telephone at (573) 751-7906 by e-mail at leasue.meyers@dnr.mo.gov, or by mail at the Missouri Department of Natural Resources, Water Protection Program, PO Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM

Refaat Mefrakis, P.E., Chief
Permits and Engineering Section

RM:lmn

Enclosure

c: Mr. Richard McMillian, 600 W. College St. Suite 104, Springfield, MO 65806
Ms. Kristen Pattinson, SWRO

Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
NPDES Permits and Engineering Section

Water Quality and Antidegradation Review

For the Protection of Water Quality and Determination of Effluent Limits for Discharge to Davis Branch

by

MDOC, Ozark Correctional Center Wastewater Treatment Facility

January 2011

Table of Contents

1. FACILITY INFORMATION

FACILITY NAME: MDOC, Ozark Correctional Center WWTF NPDES #: MO-0093556

FACILITY TYPE/DESCRIPTION: The facility is an extended aeration plant with mechanical sludge dewatering and a storage lagoon. The sludge is disposed of at a landfill. The wastewater effluent is piped from the treatment plant to the discharge on Davis Branch (1.5 miles) to avoid the losing segment of Davis Branch. The proposed upgrades to the facility include the addition of ultraviolet (UV) disinfection and chemical treatment of phosphorus. The facility is not proposing an expansion of the design flow. The design flow will remain at 92,000 gallons per day (0.092 MGD). Average flow is 44,000 gallons per day (0.044 MGD).

EDU*:	Ozark/White	ECOREGION:	Ozark/Highland/Springfield Plain
COUNTY:	Webster	LEGAL DESCRIPTION:	NW ¼, NW ¼, Sec. 14, T28N, R18W
8- DIGIT HUC:	11010002	UTM COORDINATES:	x = 510412; y = 4109100

* - Ecological Drainage Unit

2. WATER QUALITY INFORMATION

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, a facility is required to use *Missouri's Antidegradation Rule and Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

The facility discharges to a gaining segment of Davis Branch. The facility has reported multiple total phosphorus exceedances in 2009 and 2010 on their discharge monitoring reports.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	RECEIVING WATERBODY	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.14	Secondary	Davis Branch	0.0

3. RECEIVING WATERBODY INFORMATION

WATERBODY NAME	CLASS	WBID	LOW-FLOW VALUES (CFS)			DESIGNATED USES**
			1Q10	7Q10	30Q10	
Davis Branch	C	2358	0.0	0.0	0.1	AQL, LWW, WBC(B)

** Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cold Water Fishery (CDF), Cool Water Fishery(CLF), Drinking Water Supply (DWS), Industrial (IND), Irrigation (IRR), Livestock & Wildlife Watering (LWW), Secondary Contact Recreation (SCR), Whole Body Contact Recreation (WBC)

RECEIVING WATER BODY SEGMENT #1: Outfall
Upper end segment* UTM coordinates: x = 510412; y = 4109100 (Outfall)
Lower end segment* UTM coordinates: x= 508304; y= 4106781 (Davis Branch (losing))

*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

4. General Comments

White River Engineering prepared, on behalf of Ozark Correctional Center, the *Antidegradation Report for Upgrades* dated November 2010. Geohydrological Evaluation was submitted with the request and the discharge is to a gaining segment of Davis Branch before becoming a losing stream (Appendix A: Map and Appendix C: Geohydrologic Evaluation). Applicant elected to assume that that aluminum was significantly degrading the receiving stream in the absence of existing water quality. An alternative analysis was conducted to fulfill the requirements of the AIP. Information that was provided by the applicant in the submitted report and summary forms in Appendix D was used to develop this review document. A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and no endangered species were found to be impacted by the discharge. Table 3 in the Derivation and Discussion Section reflects changes to Missouri Water Quality Standards for E. Coli, pH, ammonia, and nutrient criteria. Due to the losing stream segment appearing to be less than 2 miles from the discharge location, E. Coli effluent limits of 126 colonies per 100 mL were placed as a daily maximum and monitoring for Nitrates, Nitrites was included in this review. Biochemical Oxygen Demand, Total Suspended Solids, and Dissolved Oxygen effluent limits were not a part of this antidegradation review and not changed from the renewal permit issued in 2009. The applicant mentioned in their submittal the downstream dairy farm may be affecting the stream quality, especially in regards to E. Coli in the stream.

5. Antidegradation Review Information

The following is a review of the *Antidegradation Report* dated November 12, 2010.

5.1. Tier Determination

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix D: Tier Determination and Effluent Limit Summary). Pollutants of concern are defined as those pollutants "proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge." (AIP, Page 7). Tier 2 was assumed for all POCs (see Appendix D).

Table 1. Pollutants of Concern and Tier Determination

Pollutants of Concern	Tier*	Degradation	Comment
Aluminum	2	Significant	

* Tier assumed.

The following Antidegradation Review Summary attachments in Appendix D were used by the applicant:

- ☒ Tier Determination and Effluent Summary
- ☒ Attachment A, Tier 2 with significant degradation.

5.2. Existing Water Quality

No existing water quality data was submitted. All POCs were considered to be Tier 2 and significantly degraded in the absence of existing water quality.

5.3. Demonstration of Necessity and Social and Economic Importance

Missouri's antidegradation implementation procedures specify that if the proposed activity does result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of

social and economic importance are required. Six alternatives from non-degrading to less degrading to degrading alternatives were evaluated. Alternatives 1 and 2, non-degrading slow rate land application and subsurface irrigation, were eliminated as impracticable due to poor soils. According to the geohydrologic evaluation, the facility has severe geohydrologic limitations, moderate collapse potential and slopes ranging up to 15%, which limits the economic efficiency and practicability of land application. For land application, it was estimated 75 acres was necessary to handle the flows from the treatment plant, 15 for the lagoon and berms and 60 acres set aside for land application. Subsurface irrigation was also evaluated. It was estimated that over 30 acres of land was required for the drip irrigation. With the soils being limited and the large amount of land required for land application and subsurface irrigation, both alternatives were considered not practicable or economically efficient. Regional sewers are not available as it is approximately 3 miles from Ozark Correctional Center to the Fordland WWTF (MO0099813) and 4 miles to the Village of Diggin's WWTF (MO0129828). Fordland has a design capacity of 100,000 gallons per day and Diggins has a design capacity of 45,000 gallons per day, meaning neither facility has the capacity to treat the flows from Ozark Correctional Center. The closest treatment plant with sufficient capacity is the City of Springfield, approximately 22 miles away. The three non-degrading alternatives evaluated were not practicable or economically efficient.

Three degrading options were evaluated. All three options involve addition of a second clarifier and phosphorus removal. The addition of the second clarifier is to allow maintenance activities to occur while the facility is operating. The first option evaluated was to add phosphorus removal, a second clarifier to allow the treatment plant to operate while maintenance occurs and the continued use of chlorine for disinfection. This was identified as the base case as the facility uses chlorine for disinfection and is in compliance with the interim total residual chlorine limit. However, to meet the final more stringent total residual chlorine limit in 2012, the facility needs to add dechlorination to the process. Sodium Thiosulfate was identified as the appropriate method for dechlorination. To add the dechlorination, the facility would need to construct a chlorine contact site and a small building to house the required chemical container and feed equipment. The annual cost for chemicals, disinfection and power for the metering pumps is estimated to be $7,500.

The second degrading alternative identified was phosphorus removal, addition of second clarifier, and ultraviolet disinfection. The monitoring system and the electrical controls for the UV system can be mounted in the existing electrical control building. The estimated annual cost for chemicals, disinfection and power for the disinfection and metering pump is estimated to be $3,945. This option was identified as the preferred alternative.

The third degrading alternative identified was phosphorus removal, addition of second clarifier, tertiary filtration and ultraviolet disinfection. Tertiary filters are beneficial when phosphorus effluent limits are below 1.0 mg/L, as Ozark's is. The facility is consistently achieving less than 10 mg/L for Biochemical Oxygen Demand and Total Suspended Solids, which is below the permit limit of 30 mg/L. The addition of tertiary filters will not greatly benefit the removal of other pollutants of concern. Chemical treatment for phosphorus would still be required to meet the 0.5 mg/L limit. This option would require redundant filtering. The estimated annual cost for chemicals, disinfection, and power for the pumps, filter system and disinfection system is $5,320.

The affected community is the State of Missouri as the facility is a state owned property being used by Department of Corrections' staff and inmates. The surrounding community is rural. The upgrades to the system provide an environmental benefit in providing disinfection and treatment of the wastewater.

Table 2: Phosphorus Removal and Disinfection Treatment Comparisons

Parameters	Phosphorus Removal & Chlorination/ Dechlorination	Phosphorus Removal & UV Disinfection	Phosphorus Removal, Tertiary Filtration & UV
Total Phosphorus	< 0.5 mg/L	< 0.5 mg/L	< 0.5 mg/L
Aluminum, Total Recoverable	< 0.75 mg/L	< 0.75 mg/L	< 0.75 mg/L
Chlorine, Total Residual*	8 µg/L (<0.13 mg/L)	NA	NA
UV	NA	Y	Y
Practicable	Y	Y	Y
Economically Efficient	Y	Y	N
Life-Cycle Cost**	$492,163	$455,336	$949,101
Ratio	1.0	0.92	1.93

* Total Residual Chlorine is limited by the Method detection limit.
** Life-cycle cost estimate using 20 year design life, 3.0% inflation and 2.5% interest

5.3.1. REGIONALIZATION ALTERATIVE

Within Section II B 1. of the AIP, discussion of the potential for discharge to a regional waste water collection system is mentioned. Webster County does not have a regional sewer district. The closest municipal wastewater treatment plants are in the towns of Fordland and Diggins, both of which are more than 3 miles away and are not regional authorities. This authority is not operative at this time so a waiver required under 10 CSR 20-6.010(3) (B) 1 Continuing Authorities can not be obtained.

NEEDS A WAIVER TO PREVENT CONFLICT WITH AREA WIDE MANAGEMENT PLAN APPROVED UNDER SECTION 208 OF THE CLEAN WATER ACT AND/OR UNDER 10 CSR 20-6.010(3) (B) 1 OR 2 CONTINUING AUTHORITIES? (Y OR N) N

6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDEGRADATION REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.

7. Mixing Considerations

Mixing Zone (MZ):. Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].
Zone of Initial Dilution (ZID): Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)]

8. Permit Limits and Monitoring Information

Wasteload Allocation Study Conducted (Y or N):	N	Use Attainability Analysis Conducted (Y or N):	N	Whole Body Contact Use Retained (Y or N):	Y

Wet Test (Y or N): Y Frequency: Once/Permit Cycle AEC: 100% Method: Multiple

Table 3. Effluent Limits

Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Basis for Limit (Note 2)	Monitoring Frequency
Flow	MGD	*		*	FSR	once/month
BOD_5 ***	mg/L		45	30	FSR	once/month
TSS ***	mg/L		45	30	FSR	once/month
pH	SU	6.5 – 9.0		6.5 – 9.0	FSR	once/month
Oil & Grease	mg/L	15		10	FSR	once/month
Temperature	°C	*		*	N/A	once/month
Ammonia as N (Apr 1 – Sept 30)	mg/L	3.7		1.4	WQBEL	once/month
Ammonia as N (Oct 1 – Mar 30)	mg/L	7.5		2.9	WQBEL	once/month
Total Phosphorus	mg/L	*		0.5	FSR	once/month
Total Nitrogen	mg/L	*		*	FSR	once/month
Nitrates, Nitrites	mg/L	*		*	FSR	once/month
Escherichia coliform (E. coli)	Note 1	126		126	FSR	once/week
Dissolved Oxygen (mg/L)	mg/L	*		*		once/month
Aluminum, total recoverable	mg/L	0.75		0.37	PEL	once/month

Note 1 – Colonies/100 mL
Note 2– Water Quality-based Effluent Limitation --WQBEL; or Minimally Degrading Effluent Limit--MDEL; or Preferred Alternative Effluent Limit-PEL; Technology-based Effluent Limit-TBEL;or No Degradation Effluent Limit--NDEL; or FSR --Federal/State Regulation; or N/A--Not Applicable. Also, please see the **General Assumptions of the WQAR #4 & #5.**
* - Monitoring requirements only.
***This facility is required to meet a removal efficiency of 85% or more for BOD_5 and TSS. Influent BOD_5 and TSS data should be reported to ensure removal efficiency requirements are met.

9. Receiving Water Monitoring Requirements

No receiving water monitoring requirements recommended at this time.

10. Derivation and Discussion of Limits

Wasteload allocations and limits were calculated using two methods:

1) Water quality-based – Using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
C_s = upstream concentration
Q_s = upstream flow
C_e = effluent concentration
Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration).

Water quality-based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

2) Alternative Analysis-based – Using the preferred alternative's treatment capacity for conventional pollutants such as BOD5 and TSS that are provided by the consultant as the WLA, the significantly-degrading effluent average monthly and average weekly limits are determined by applying the WLA as the average monthly (AML) and multiplying the AML by 1.5 to derive the average weekly limit (AWL). For toxic and nonconventional pollutant such as ammonia, the significantly-degrading effluent average monthly and daily maximum limits are determined by applying the WLA multiplied by 1.19 as the average monthly (AML), and multiplying the AML by 3.11 to derive the maximum daily limit. This is an accepted procedure that is defined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Note: Significantly-degrading effluent limits have been based on the authority included in Section III. Permit Consideration of the AIP. Also under 40 CFR 133.105, permitting authorities shall require more stringent limitations than equivalent to secondary treatment limitations for 1) existing facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, and 2) new facilities if the permitting authority determines that the 30-day average and 7-day average BOD_5 and SS effluent values that could be achievable through proper operation and maintenance of the treatment works, considering the design capability of the treatment process.

10.1. OUTFALL #001 – **MAIN FACILITY OUTFALL**

- **Flow**. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD_5).** BOD_5 limits of 30 mg/L monthly average, 45 mg/L average weekly limits remain. Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **Total Suspended Solids (TSS).** 30 mg/L monthly average, 45 mg/L average weekly limits remain. Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **Dissolved Oxygen.** Monitoring only to determine if reasonable potential exists to violate the Missouri Water Quality Standards. This parameter remains and shall be evaluated upon permit renewal.

- **pH.** pH shall be maintained in the range from 6.5 to nine (6.5– 9) standard units [10 CSR 20-7.015 (8)(A)2.]. The pH change became effective June 30, 2010.

- **Temperature.** Monitoring requirement only. Temperature affects the toxicity of Ammonia.

- **Total Ammonia Nitrogen.** Current permit contains effluent limits for four seasons, however the department's policy is ammonia effluent limits for two seasons. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: April 1 – September 30, Winter: October 1 – March 31.

Summer

C_e =(((Qe+Qs)*C) - (Qs*Cs))/Qe

Chronic WLA: C_e = ((0.14 + 0.0)1.5 – (0.0 * 0.01))/0.14 C_e = 1.5 mg/L

Acute WLA: C_e = ((0.14 + 0.0)12.1 – (0.0 * 0.01))/0.14 C_e = 12.1 mg/L

LTA_c = 1.5 mg/L (0.780) = **1.2 mg/L** [CV = 0.6, 99th Percentile, 30 day avg.]
LTA_a = 12.1 mg/L (0.321) = 3.88 mg/L [CV = 0.6, 99th Percentile]
MDL = 1.2 mg/L (3.11) = 3.7 mg/L [CV = 0.6, 99th Percentile]
AML = 1.2 mg/L (1.19) = 1.4 mg/L [CV = 0.6, 95th Percentile, n = 30]

Winter

Chronic WLA: C_e = ((0.14 + 0.0)3.1 – (0.0 * 0.01))/0.14 C_e = 3.1 mg/L

Acute WLA: C_e = ((0.14 + 0.0)12.1 – (0.0025 * 0.01))/0.14 C_e = 12.1 mg/L

LTA_c = 3.1 mg/L (0.780) = **2.4 mg/L** [CV = 0.6, 99th Percentile, 30 day avg.]
LTA_a = 12.1 mg/L (0.321) = 3.9 mg/L [CV = 0.6, 99th Percentile]
MDL = 2.4 mg/L (3.11) = 7.5 mg/L [CV = 0.6, 99th Percentile]
AML = 2.4 mg/L (1.19) = 2.9 mg/L [CV = 0.6, 95th Percentile, n = 30]

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	3.7	1.4
Winter	7.5	2.9

- **E. coli**. Discharges to losing streams shall not exceed 126 per 100 ml at any time, as per 10 CSR 20-7.031(4)(C). The discharge is to a gaining segment of Davis Branch per 10 CSR 20-7.015(4)(A), however it is within two miles of a losing segment of Davis Branch (See Appendix A: Map). *E. Coli* replaced fecal coliform as the indicator bacteria in 2009. Facility is adding ultraviolet radiation for disinfection. Also, please see **GENERAL ASSUMPTIONS OF THE WQAR #7.**

- **Total Phosphorous.** Average monthly limit 0.5 mg/L per 10 CSR 20-7.015(3)G. Facility is adding chemical treatment for total phosphorus removal.

- **Total Nitrogen**. Monitoring only to determine if "Reasonable Potential" exists to violate Water Quality Standards. The department has adopted nutrient criteria for lakes, reservoirs, and their watersheds. [10 CSR 20-7.031(4)(N)]

- **Nitrates, Nitrite**. Monitoring only to determine if "Reasonable Potential" exists to violate Water Quality Standards. Nitrate and nitrite monitoring were added based on the proximity to losing stream segments. The Department is evaluating proposed effluent limitations for Nitrate as Nitrogen for discharges that have the potential of impacting groundwater. At this time we are unsure what the limitation will be. The Department will be placing a monitoring requirement in the MSOP for Nitrate as Nitrogen. Please note that limitation could be established at the drinking water standard of 10 mg/l."

- **Oil & Grease**. Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

- **Aluminum, Total Recoverable.** Applicant proposed less than 0.75 mg/L for aluminum concentration in the effluent. Following the limits derivation discussion on page 8 above, the maximum daily is set to 0.75 mg/L and back calculated to determine the average monthly limit.

  WLA= 0.75 mg/L
  MDL=WLA= 0.75 mg/L
  AML=(MDL/3.11) *1.55= 0.37 mg/L

11. ANTIDEGRADATION REVIEW PRELIMINARY DETERMINATION

The proposed upgrade to Ozark Correctional Center WWTF, 0.092 MGD will result in significant degradation of the segment identified in Davis Branch. The preferred alternative is the addition of a second clarifier and phosphorus removal equipment, along with the transition from chlorine disinfection to ultraviolet disinfection to meet water quality standards. The cost effectiveness of the other technologies were evaluated, and this alternative was found to be cost effective and determined to be the preferred alternative.

Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to attain the highest statutory and regulatory requirements. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Leasue Meyers
Date: January 2011
Unit Chief: John Rustige, P.E.

Appendix A: Map of Discharge Location

Appendix B: Natural Heritage Review

Natural Heritage Review
On-line LEVEL 1 REPORT

Print this page and use/attach as documentation that your project has consulted with the Missouri Department of Conservation and the U.S. Fish and Wildlife Service about species of conservation concern. No further consultation about this project is necessary.

October 13, 2010

Your login and project information below:

User ID: 1228
First Name: Richard
Last Name: McMillian
Email Address: richard@whiterivereng.com
Business: White River Engineering, Inc.
Project: Wastewater

Your query information below:

User ID	Response Level	Township	Range	Section	Direction	Latitude	Longitude	Point Line	UTM North	UTM East	Rectangle	TimeStamp
1228		28	18	14	W	0	0		0	0		10/13/2010 10:37:29 AM

Wastewater

Wastewater – storm sewer, sanitary sewer, treatment plant, discharge

Clean Water Act permits issued by other agencies regulate both construction and operation of wastewater and storm water systems, and provide many important protections for fish and wildlife resources throughout the project area and at some distance downstream.

Fish and wildlife almost always benefit when unnatural pollutants are removed from water, and concerns are minimal if (a) the project area includes no protected species or restricted habitat identified in this report, and (b) construction is managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions.

Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with of native plant species compatible with the local landscape and for wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza.

Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers is a Conservation Department publication available at http://www.mdc.mo.gov/documents/nathis/endangered/streams.pdf

Cautions related to species/habitats of concern or project type. Please reflect these concerns and recommendations in your plans :

- Even if records of species/habitats of concern do not exist, there is a possibility that your project will encounter a species of concern that is not on record. In Missouri, 93% of the land is in private ownership, and most of that has never been checked for endangered species. Animals move over varying ranges, and in time both animal and plant populations can move.

- If your project encounters and potentially affects a federally-listed species, immediately report it to the U.S. Fish and Wildlife Service or Missouri Department of Conservation.

No further consultation with the U.S. Fish and Wildlife Service or the Missouri Department of Conservation is necessary. Print this document to establish compliance with requirements to consult with U.S. Fish and Wildlife Service and the Missouri Department of Conservation about this project.

If you need additional information, please contact:

MDC Natural Heritage Review
Policy Coordination Unit
P.O. Box 180
Jefferson City , MO 65102-0180
(Phone 573-522-4115 ext. 3250)
www.mdc.mo.gov

or

U.S. Fish and Wildlife Service Ecological Services
101 Park Deville Drive , Suite A
Columbia , Missouri 65203-0007
(Phone 573-234-2132)

A HERITAGE REVIEW provides information about species and habitats of concern that could be affected by the project. Heritage records note things that were positively identified at some date and time, marked at a location that may be more or less precise. Animals move quickly but plant communities can move also. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean the project may not encounter something. Because of this, reports include information about records near but not necessarily on the project site. Three different kinds of information are provided.

- FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia , Missouri 65203-0007 ; Phone 573-234-2132; Fax 573-234-2181) for consultation.

- STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and protected under the Wildlife Code of Missouri (RSMo 3 CSR 10). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR10-4.111. "State Rank" is numeric rank of relative rarity, protected under general provisions of the Wildlife Code but not endangered.

- "Concerns & management recommendations" are things for which one might prudently look. There is no specific heritage record, but our knowledge of the surrounding landscape suggests consideration. 93% of Missouri 's land is in private ownership, so most sites have never been carefully inspected by conservation professionals

This report is not a site clearance letter. Rather, it provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from our Heritage Database into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive natural resources. However, the Heritage Database is only one reference that should be used to evaluate potential adverse impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information and species biological characteristics would additionally ensure that species of conservation concern are appropriately identified and addressed.

Additional information on rare, endangered and watched species may be found at http://www.mdc.mo.gov/nathis/endangered/. Detailed information about species mentioned may be accessed at http://mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx. If you would like printed copies of best management practices cited as internet URLs, please contact us.

Appendix C: 2010 Geohydrologic Evaluation

Missouri Department Of Natural Resources
Division of Geology and Land Survey
P.O. Box 250
Rolla, Missouri 65402-0250
Phone - 573.368.2161 Fax - 573.368.2111
E-mail - gspgeol@dnr.mo.gov

Project ID Number
LWE11017
County
WEBSTER

Geohydrologic Evaluation of Liquid Waste Treatment Site

Project **Ozark Correctional Center** Quadrangle **FORDLAND**
Location **NW1/4 NW1/4** Section **14** Township **28 N** Range **18 W**
Additional Location Information **929 Honor Camp Lane, Fordland, MO 65652**
Latitude **37** Deg **7** Min **42** Sec Longitude **92** Deg **52** Min **58** Sec

Owner: Office of Administration FMDC (573) 751-3740
P.O. Box 809, Jefferson City, MO 65102

Requestor: White River Engineering, Inc. (417) 862-3355
Richard McMillian, P.E.
600 W. College Street, Suite 104, Springfield, MO 65806

Previous Reports ☐ Not Applicable

Date	3/31/2004	11/3/1994	6/24/1991
Identification Number	23804	20295	37790
Fiscal Year		95	90

Facility Type
- (•) Mechanical treatment plant
- ( ) Recirculating filter bed
- ( ) Earthen lagoon with discharge
- (•) Earthen holding basin
- ( ) Land application
- ( ) Other type of facility

Type of Waste
- ( ) Animal
- (•) Human
- ( ) Process or industrial
- ( ) Leachate
- ( ) Other waste type

Funding Source
- (•) PPG
- ( ) WWLF-SRF
- ( ) Non-Point Source

Other Information
- ( ) Plans were submitted
- ( ) Site was investigated by NRCS
- ( ) Soil or geotechnical data were submitted

Date of Field Visit 9/9/2010 **Stream Classification:** (•) Gaining ( ) Losing ( ) No discharge

Overall Geologic Limitations
- ( ) Slight
- ( ) Moderate
- (•) Severe

Collapse Potential
- ( ) Not applicable
- ( ) Slight
- (•) Moderate
- ( ) Severe

Topography
- (•) < 4%
- (•) 4% to 8%
- (•) 8% to 15%
- ( ) > 15%

Landscape Position
- ( ) Broad uplands
- (•) Ridgetop
- (•) Hillslope
- ( ) Narrow ravine
- ( ) Floodplain
- (•) Alluvial plain
- ( ) Terrace
- ( ) Sinkhole

Bedrock: The uppermost bedrock is Ordovician-age Jefferson City-Cotter Dolomite.

Surficial Materials: Unconsolidated materials existing above bedrock are silty-clay gravel residuum (GM/GC).

Project ID Number **LWE11017**

Recommended Construction Procedures

- ○ Installation of clay pad
- ○ Diversion of subsurface flow
- ○ Rock excavation
- ○ Compaction
- ◉ Artificial sealing
- ○ Limit excavation depth

(Required Geologic Exploration

(Missouri Clean Water Commission 10 CSR 20-8.200 Wastewater Treatment Ponds)

Determine Overburden Properties

- ○ Partical size analysis
- ○ Standard Proctor density
- ○ Permeability coefficient for undisturbed sample
- ○ Atterburg limits
- ○ Overburden thickness
- ○ Permeability coefficient for remolded sample

Determine Hydrologic Conditions

- ○ Groundwater elevation
- ○ Direction of groundwater flow
- ○ 25-year flood level
- ○ 100-year flood level

Notify Geologist

- ○ Before exploration
- ○ During construction
- ○ After construction
- ○ Not necessary

Remarks

The proposed Ozark Correctional Center mechanical treatment plant is located on a ridge sloping to the southeast towards Davis Branch. The present outfall of the site is located on a gaining section of Davis Branch. The site is approximately 1 mile south of the intersection of Honor Camp Lane and US Highway 60, approximately 3.5 miles east of Fordland, Missouri.

The site elevation is approximately 1,640 feet msl. The location of the present outfall is 1.5 miles below the treatment plant at an elevation of approximately 1,400 msl. Previous reports have identified Davis Branch as gaining for 1.75 miles below the present outfall, then becoming losing down to the Finley River, where conditions become gaining again. Observations during the site visit corroborate the previous evaluation. At the request of the facility's contractor, two unclassified streams closer to the correctional facility were evaluated. Both streams were determined to be losing. The Fordland Anticline and the Sarvis Point fault are mapped near the correctional facility. Springs were observed around Davis Branch, but wet weather conditions at the time of the site visit make it possible these were ephemeral, "wet-weather" springs. No sinkholes or caves were observed in the vicinity of the site.

Observations in the vicinity of the site and nearby well logs indicate approximately 20-40 feet of surficial materials. The site visit revealed that the surficial materials consist of silty-clay gravel residuum (GM/GC) derived from Mississippian-age Burlington Limestone and Northview Formation shales, and the upper weathered zone of the Ordovician-age Jefferson City-Cotter Dolomite.

Outcrops and residuum in the vicinity of the site indicate that the uppermost bedrock is the Ordovician-age Jefferson City-Cotter Dolomite, which generally exhibits moderate permeability near the surface and low permeability at depth. The formation in this area consists of silty, fine- to medium-crystalline cherty dolomite. Underlying the Jefferson City-Cotter Dolomite is the Ordovician-age Roubidoux Formation, which exhibits low permeability in this area. It is typically a sandstone and sandy dolomite in this area.

The site currently has a discharging mechanical treatment plant. The plant is to be upgraded to meet phosphorus and chlorine limits anticipated in the future. A former lagoon at the site was also evaluated as a potential holding basin. While the lagoon appeared to hold water and was observed to be in good condition, it may require artificial sealing to prevent migration of stored effluent into the subsurface if it is used.

This site receives a severe overall geologic limitations rating due to the losing nature of the receiving stream and highly permeable surficial materials and bedrock. If an earthen storage basin is utilized, that basin receives a moderate collapse potential due to the high permeability residuum under the facility. Should this facility fail to operate properly, regional groundwater supplies could be impacted.

This document is a preliminary report. It is not a permit. Additional data may be required by the Department of Natural Resources prior to the issuance of a permit. This re[illegible]only at the above location and becomes invalid one year after the report date be[illegible]

Report By: Blake Smotherman

Report Date: 9/23/2010

CC WPP, SWRO

Appendix D: Antidegradation Review Summary Attachments

The attachments that follow contain summary information provided by the applicant, Ozark Correctional Center.

1) Tier Determination and Effluent Limit Summary Sheet.

2) Attachment A:

NOV 12 2010

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
WATER QUALITY REVIEW ASSISTANCE/ANTIDEGRADATION REVIEW REQUEST
PRE-CONSTRUCTION REVIEW FOR PROTECTION OF BENEFICIAL USES AND DEVELOPING EFFLUENT LIMITS

TYPE OF PROJECT
☐ Grant ☐ SRF Loan ☑ All Other Projects

REQUESTER	TELEPHONE NUMBER WITH AREA CODE
Richard McMillian, PE	(417) 862-3355
PERMITTEE	**TELEPHONE NUMBER WITH AREA CODE**
Office of Administration, Division of Facilities Management, Design & Construction	(573) 751-3740

REASON FOR REQUEST

☐ New Discharge (See Instruction #9) ☑ Upgrade (No expansion) (See AIP) ☐ Expansion

DESCRIPTION OF PROPOSED ACTIVITY:

Install phosphorus removal components (chemical precipitation), redundant clarifier, & UV disinfection system

FACILITY INFORMATION

FACILITY NAME	MSOP NUMBER (IF APPLICABLE)
Ozark Correctional Center WWTP	MO-0093556
COUNTY	**SIC / NAICS CODE**
Webster	#9223 / 4952

METHOD OF BACTERIA COMPLIANCE
☐ Chlorine Disinfection ☑ Ultraviolet Disinfection ☐ Ozone ☐ Not Applicable

WATER QUALITY ISSUES

Current discharge does not comply with MSOP limits for phosphorus.

Water quality issues include: effluent limit compliance issues, notice (s) of violation, water body beneficial uses not attained or supported, etc.

OUTFALL	LOCATION (LAT/LONG OR LEGAL DESCRIPTION)	MAPPED[1] (CHECK)	RECEIVING WATER BODY[2]
#1	+3707415 / -09252580	☑	Davis Branch
		☐	
		☐	

[1] Attach topographic map (See www.dnr.mo.gov/internetmapviewer/) with outfall location(s) clearly marked. For additional outfalls, attach a separate form.
[2] See general instructions for discharges to streams.

OUTFALL	NEW DESIGN FLOW** (MGD)	TREATMENT TYPE	EFFLUENT TYPES*
#1	n/a	Activated Sludge	Domestic

* Describe predominating character of effluent. Example: domestic wastewater, municipal wastewater, industrial wastewater, storm water, mining leachate, etc.
** If expansion, indicate new design flow.

☑ Checked for rare or endangered species and provided determination with this request. See Instruction #8.

ANTIDEGRADATION REVIEW SUBMISSION:

See attached Antidegradation instructions. Applicant supplied a summary within:
☑ Tier Determination and Effluent Limit Summary
☑ Attachment A – Significant Degradation
☐ Attachment B – Minimal Degradation
☐ Attachment C – Temporary degradation
☐ Attachment D – Tier 1 Review
☐ No Degradation Evaluation – Conclusion of Antidegradation Review

MO 780-1893 (03-09)

See general instructions. Additional information may be needed to complete your request. Your request may be returned if items are missing. Revised submittal will be considered a new submittal.

SIGNATURE Richard McMillian DATE 11/8/10

PRINT NAME Richard McMillian, PE, White River Engineering, Inc.

E-MAIL ADDRESS richard@whiterivereng.com

Submit request to: Missouri Department of Natural Resources

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

ANTIDEGRADATION REVIEW SUMMARY
TIER DETERMINATION AND EFFLUENT LIMIT SUMMARY

1. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Ozark Correctional Center WWTP		417-767-4491	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
929 Honor Camp Lane	Fordland	MO	65652

2. RECEIVING WATER BODY SEGMENT #1

NAME
Davis Branch, a tributary to Finley River (James River Basin)

2.1 UPPER END OF SEGMENT (Location of discharge)
UTM ____ OR Lat +3707415 Long -09252580

2.2 LOWER END OF SEGMENT
UTM ____ OR Lat +3706366 Long -09254192

Per the Missouri Antidegradation Rule and Implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."

3. WATER BODY SEGMENT #2 (IF APPLICABLE)

NAME

3.1 UPPER END OF SEGMENT
UTM ____ OR Lat ____, Long ____

3.2 LOWER END OF SEGMENT
UTM ____ OR Lat ____, Long ____

4. WATER BODY SEGMENT #3 (IF APPLICABLE)

NAME

4.1 UPPER END OF SEGMENT
UTM ____ OR Lat ____, Long ____

4.2 LOWER END OF SEGMENT
UTM ____ OR Lat ____, Long ____

5. PROJECT INFORMATION

Is the receiving water body an Outstanding National Resource Water, an Outstanding State Resource Water, or drainage thereto?

☐ Yes ■ No

In Tables D and E of 10 CSR 20-7.031, Outstanding National Resource Waters and Outstanding State Resource Water are listed. Per the Antidegradation Implementation Procedure Section 1.B.3., "any degradation of water quality is prohibited in these waters unless the discharge only results in temporary degradation." Therefore, if degradation is significant or minimal, the Antidegradation Review will be denied.

Will the proposed discharge of all pollutants of concern, or POCs, result in no net increase in the ambient water quality concentration of the receiving water after mixing?

☐ Yes ☑ No

If yes, submit a summary table showing the levels of each pollutant of concern before and after the proposed discharge in the receiving water and then complete Attachment B for the first downstream classified water body segment.

Will the discharge result in temporary degradation?

☐ Yes ■ No

If yes, complete Attachment C.

Has the project been determined as non-degrading?

☐ Yes ☑ No

If yes, complete No Degradation Evaluation – Conclusion of Antidegradation Review form.
Submit with the appropriate Construction Permit Application as no antidegradation review is required.

If yes to one of the above questions, skip to Section 8 - Wet Weather.

MO 780-2025 (05-09)

6. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data by approved the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Water Quality Monitoring and Assessment Section.

Date existing water quality data was provided by the Water Quality Monitoring and Assessment Section:

Approval date of the QAPP by the Water Quality Monitoring and Assessment Section:

Approval date of the project sampling plan by the Water Quality Monitoring and Assessment Section:

Approval date of the data collected for all appropriate pollutants of concern by the Water Quality Monitoring and Assessment Section:

Comments/Discussion:

7. POLLUTANTS OF CONCERN AND TIER DETERMINATION(S)

Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.S. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).

Water Body Segment One
Pollutants of Concern and Tier Determination(s)

Tier 1	Tier 2 with Minimal Degradation	Tier 2 with Significant Degradation
		Aluminum (Al)*

Note: Add an asterisk to items that you only assume are Tier 2 with significant degradation.

Water Body Segment Two
Pollutants of Concern and Tier Determination(s)

Tier 1	Tier 2 with Minimal Degradation	Tier 2 with Significant Degradation

- For pollutants of concern that are Tier 2 with significant degradation, complete Attachment A.
- For pollutants of concern that are Tier 2 with minimal degradation, complete Attachment B.
- For pollutants of concern that are Tier 1, complete Attachment D. Additionally, a Tier 2 review must be conducted for each pollutant of concern on the appropriate water body segment.

8. WET WEATHER ANTICIPATIONS

If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to this report.

What is the Wet Weather Flow Peaking Factor in relation to design flow?
(330,000 gpd / 92000 gpd) = 3.6

Wet Weather Design Summary:
Wet weather flows are not considered excessive at this facility

9. SUMMARY OF THE PROPOSED ANTIDEGRADATION REVIEW EFFLUENT LIMITS

What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

Pollutant of Concern	Units	Wasteload Allocation	Average Monthly Limit	Daily Maximum Limit
BOD5				
TSS				
Dissolved Oxygen				
Ammonia				
Bacteria (E. Coli)				
Aluminum	mg/L		0.37	0.75

These proposed limits must not violate water quality standards, be protective of beneficial uses and achieve the highest statutory and regulatory requirements.

Attach the Antidegradation Review report and all supporting documentation.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulation.

SIGNATURE: Richard McMillian — DATE: 11/8/10

NAME AND OFFICIAL TITLES: Richard McMillian, PE

COMPANY NAME: White River Engineering, Inc.

ADDRESS	CITY	STATE	ZIP CODE
600 W. College St., Suite 104	Springfield	MO	65806

TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
417-862-3355	richard@whiterivereng.com

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE: Gary Claspill — DATE: 11/8/10

NAME AND OFFICIAL TITLES: Gary Claspill, Section Leader, Office of Administration, Division of Facilities Managment, Design & Construction

ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 809	Jefferson City	MO	65102

TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
573-751-3740	Gary.Claspill@oa.mo.gov

CONTINUING AUTHORITY: Continuing Authority is the permanent organization that will be responsible for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf.

I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE: Gary Claspill — DATE: 11/8/10

NAME AND OFFICIAL TITLES: Gary Claspill, Section Leader, Office of Administration, Division of Facilities Managment, Design & Construction

ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 809	Jefferson City	MO	65102

TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
573-751-3740	Gary.Claspill@oa.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

ANTIDEGRADATION REVIEW SUMMARY
ATTACHMENT A: TIER 2 – SIGNIFICANT DEGRADATION

1. FACILITY

NAME			TELEPHONE NUMBER WITH AREA CODE
Ozark Correctional Center WWTP			417-767-4491
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
929 Honor Camp Lane	Fordland	MO	65652

2. RECEIVING WATER BODY SEGMENT #1

NAME
Davis Branch, a tributary to Finley River (James River Basin)

3. WATER BODY SEGMENT #2 (IF APPLICABLE)

NAME

4. IDENTIFYING ALTERNATIVES

Supply a summary of the alternatives considered and the level of treatment attainable with regards to the alternative. "For Discharges likely to cause significant degradation, an analysis of non-degrading and less-degrading alternatives must be provided," as stated in the Antidegradation Implementation Procedure Section II.B.1. Per 10 CSR 20-6.010(4)(D)1., the feasibility of a no-discharge system must be considered. Attach all supportive documentation in the Antidegradation Review report.

Non-degrading alternatives: Slow Rate Land Application, Subsurface Drip Distribution, & Regionalization

Alternatives ranging from less-degrading to degrading including Preferred Alternative (All must meet water quality standards):

Alternatives	Level of Treatment Attainable for each Pollutant of Concern					
	BOD	TSS	Ammonia as N	Bacteria (E. Coli)	Phosphorus	Aluminum
	(mg/L)	(mg/L)	(mg/L)	(#/100mL)	(mg/l)	(mg/l)
P-Removal + Dechlorination					<0.5	<0.75
P-Removal + UV Disinfection					<0.5	<0.75
P-Removal + Filtration + UV					<0.5	<0.75

Identifying Alternatives Summary: Non-degrading and less-degrading alternatives have been evaluated in the attached Antidegradation Review Report in accordance with Missouri's AIP.

5. DETERMINATION OF THE REASONABLE ALTERNATIVE

Per the Antidegradation Implementation Procedure Section II.B.2, "a reasonable alternative is one that is practicable, economically efficient and affordable." Provide basis and supporting documentation in the Antidegradation Review report.

Practicability Summary:

"The practicability of an alternative is considered by evaluating the effectiveness, reliability, and potential environmental impacts," according to the Antidegradation Implementation Procedure Section II.B.2.a. Examples of factors to consider, including secondary environmental impacts, are given in the Antidegradation Implementation Procedure Section II.B.2.a.

Each non-degrading alternative evaluated was determined to be non-practicable.

Economic Efficiency Summary:

Alternatives that are deemed practicable must undergo a direct cost comparison in order to determine economic efficiency. Means to determine economic efficiency are provided in the Antidegradation Implementation Procedure Section II.B.2.b.

The economic efficiency of each less-degrading alternative is determined in the attached Antidegradation Review Report.

Affordability Summary:

Alternatives identified as most practicable and economically efficient are considered affordable if the applicant does not supply an affordability analysis. An affordability analysis per the Antidegradation Implementation Procedure Section II.B.2.c, "may be used to determine if the alternative is too expensive to reasonably implement."

An affordability summary was not deemed necessary to determine the preferred chosen alternative.

Preferred Chosen Alternative:

The preferred chosen alternative is P-Removal + Redundant Clarifier + UV Disinfection.

Reasons for Rejecting the other Evaluated Alternatives:

Other less-degrading alternatives evaluated were rejected based on economic efficiency.

Comments/Discussion:

6. SOCIAL AND ECONOMIC IMPORTANCE OF THE PREFERRED ALTERNATIVE

If the preferred alternative will result in significant degradation, then it must be demonstrated that it will allow important economic and social development in accordance to the Antidegradation Implementation Procedure Section II.E. Social and Economic Importance is defined as the social and economic benefits to the community that will occur from any activity involving a new or expanding discharge.

Identify the affected community:

The affected community is defined in 10 CSR 20-7.031(2)(B) as the community "in the geographical area in which the waters are located.: Per the Antidegradation Implementation Procedure Section II.E.1, "the affected community should include those living near the site of the proposed project as well as those in the community that are expected to directly or indirectly benefit from the project."

The affected community is the Rural Area of the County surrounding and downstream of the Correctional Facility.

Identify relevant factors that characterize the social and economic conditions of the affected community:

Examples of social and economic factors are provided in the Antidegradation Implementation Procedure Section II.E.1., but specific community examples are encouraged.

The economy of the affected community is primarily based on agricultural activities. The Correctional Center itself is a major employer within the County.

Describe the important social and economic development associated with the project:

Determining benefits for the community and the environment should be site specific and in accordance with the Antidegradation Implementation Procedure Section II.E.1.

The proposed upgrades to the existing treatment plant will improve receiving stream water quality.

PROPOSED PROJECT SUMMARY:

The proposed improvements will enable the WWTP facility to comply with MSOP limits for P and Residual Chlorine.

Attach the Antidegradation Review report and all supporting documentation. This is a technical document, which must be signed, sealed and dated by a registered professional engineer of Missouri.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed in consistent with the Antidegradation Implementation Procedure and current state and federal regulations.

SIGNATURE	DATE
Richard McMillian	11/8/10

PRINT NAME	LICENSE #
Richard McMillian. PE	E-18813

TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS:
417-862-3355	richard@whiterivereng.com

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE	DATE
Nancy Campbell	11/8/10

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE	DATE
Nancy Campbell	11/8/10

MO780-2021 (01/09)

MISSOURI DEPARTMENT OF NATURA
WATER PROTECTION PROGRAM, WA
FORM B – APPLICATION FOR CONST
FACILITIES WHICH RECEIVE PRIMAR
day) UNDER MISSOURI CLEAN WATE

AP ID 1598H

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED

RECEIVED JUL 2013 DEQ/SWRO

NOTE ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. This application is for:

- ☐ An operating permit and antidegradation review public notice.
- ☐ A construction permit following an appropriate operating permit and antidegradation review public notice.
- ☐ A construction permit and a concurrent operating permit and antidegradation review public notice.
- ☐ A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- ☐ An operating permit for a new or unpermitted facility. Construction Permit # CP0001030
- ☐ An operating permit renewal: Permit #MO- _____ Expiration Date _____
- ☑ An operating permit modification: Permit #MO- 0093556 Reason: UV disinfection equipment installed.

1.1 Is this a Federal/State Funded Project? ☐ YES ■ NO Funding Agency/Project #: _____

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)? ■ YES ☐ NO

2. FACILITY (Outfall of)

NAME		TELEPHONE WITH AREA CODE
MDOC, Ozark Correctional Center WWTF		(417) 767-4491
ADDRESS (PHYSICAL)	CITY	STATE / ZIP CODE
929 Honor Camp Lane	Fordland	MO 65652

2.1 LEGAL DESCRIPTION: ¼, NW ¼, NW ¼, Sec. 14 , T 28 , R 18 County Webster

2.2 UTM Coordinates Easting (X): 0510829 Northing (Y): 4111662
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

2.3 Name of receiving stream: Davis Branch, a tributary to Finley River (James River Basin)

3. OWNER

NAME	E-MAIL ADDRESS	TELEPHONE WITH AREA CODE
Office of Administration, Facilities Management, Design & Constr.	GaryClaspill@oa.mo.gov	(573) 751-3740
ADDRESS	CITY	STATE / ZIP CODE
P.O. Box 809	Jefferson City	MO 65102

3.1 Request review of draft permit prior to Public Notice? ☐ YES ☐ NO

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME		TELEPHONE WITH AREA CODE
Office of Administration, Facilities Management, Design & Constr.		(573) 751-3740
ADDRESS	CITY	STATE / ZIP CODE
P.O. Box 809	Jefferson City	MO 65102

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE
Steve Young	10139	(417) 767-4491

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE WITH AREA CODE
Larry Trapp	Plant Maintenance Engineer	(417) 767-4491

7.0 ADDITIONAL FACILITY INFORMATION

7.1 Description of facilities (Attach additional sheet if required). Attach a 1" = 2,000' scale U.S. Geological Survey topographic map showing location of all outfalls and downstream landowners. (See Item 9.)

7.2 Facility SIC code: 9223; Discharge SIC code: 4952; Facility NAICS code: _____; Discharge NAICS code: _____.

7.3 Number of people presently connected or population equivalent (P.E.) 660 Design P.E. 920
Number of units presently connected: Homes _____ Trailers _____ Apartments _____ Other _____
Design flow for this outfall: 0.092 Total design flow for the facility: 0.092 Actual flow for this outfall: _____
Commercial Establishment: Daily number of employees working _____ Daily number of customers/guests _____

7.4 Length of pipe in the sewer collection system? _____feet/miles (Please denote which unit is appropriate.)

7.5 Does any bypassing occur in the collection system or at the treatment facility? ☐Yes ☐ No (If yes, attach explanation.)

7.6 Does significant infiltration occur in the collection system? ☐Yes ☑ No (If yes, attach explanation and proposed repair.)

7.7 Is industrial waste discharged to the facility identified in Item 2? ☐Yes ☑ No (If yes, see instructions.)

7.8 Will the discharge be continuous through the year? ☑Yes ☐ No
a. Discharge will occur during the following months: _____
b. How many days of the week will the discharge occur? ____

7.9 Is wastewater land applied? ☐Yes ☑ No (If yes, attach Form I.)

7.10 Will chlorine be added to the effluent? ☐Yes ☑ No
a. If chlorine is added, what is the resulting residual? _____ µg/l (micrograms per liter)

7.11 Does this facility discharge to a losing stream or sinkhole? ☐Yes ☑ No

7.12 Attach a flow chart showing all influents, treatment facilities and outfalls.

7.13 Has a waste load allocation study been completed for this facility? ☐Yes ☑ No

7.14 List all permit violations, including effluent limit exceedances in the last five years. Attach a separate sheet if necessary.
If none, write none. see DNR inspection report dated June 21, 2013.

8. SLUDGE HANDLING, USE AND DISPOSAL

8.1 Is the sludge a hazardous waste as defined by 10 CSR 25? ☐ Yes ☑ No

8.2 Sludge Production, including sludge received from others: 16.5 Design Dry Tons/Year 12 Actual Dry Tons/Year

8.3 Capacity of sludge holding structures:
Sludge storage provided: _____ cubic feet; _____ days of storage; _____ average percent solids of sludge;
☐ No sludge storage is provided.

8.4 Type of Storage:
☑ Holding tank ☐ Building
☐ Basin ☐ Other (Please describe) _____
☐ Concrete Pad

8.5 Sludge Treatment:
☐ Anaerobic Digester ☐ Lagoon ☐ Composting
☐ Storage Tank ☐ Aerobic Digester ☑ Other (Attach description)
☐ Lime Stabilization ☐ Air or Heat Drying

8.6 Sludge Use or Disposal:
☐ Land Application ☐ Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)
☐ Contract Hauler ☐ Incineration
☐ Hauled to Another Treatment Facility ☐ Sludge Retained in Wastewater treatment lagoon
☐ Other _____ Attach explanation sheet.
☑ Solid Waste Landfill

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8.7 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY
☐ By Applicant ☑ By Others (complete below)

NAME			
Will-CO Disposal, Inc. (Waste Corporation of America, Inc.)			
ADDRESS: 207 W. 2nd St. #A	CITY: Mountain Grove	STATE: MO	ZIP CODE: 65711
CONTACT PERSON: Norman Rust, Manager	TELEPHONE WITH AREA CODE: 417-926-3993	PERMIT NO.: MO-	

8.8 SLUDGE USE OR DISPOSAL FACILITY
☐ By Applicant ☑ By Others (Please complete below.)

NAME			
Black Oak Recycling and Disposal Facility			
ADDRESS: 5054 Highway HH	CITY: Hartville	STATE: MO	ZIP CODE: 65667
CONTACT PERSON: John Shull, Manager	TELEPHONE WITH AREA CODE: 417-741-7714	PERMIT NO.: MO- 0122905	

8.9 Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?
☐ Yes ☐ No (Please attach explanation)

9. DOWNSTREAM LANDOWNER (S). ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.

NAME			
Zane Lewsader			
ADDRESS: 773 Tandy Road	CITY: Seymour	STATE: MO	ZIP CODE: 65746

10. DRINKING WATER SUPPLY INFORMATION

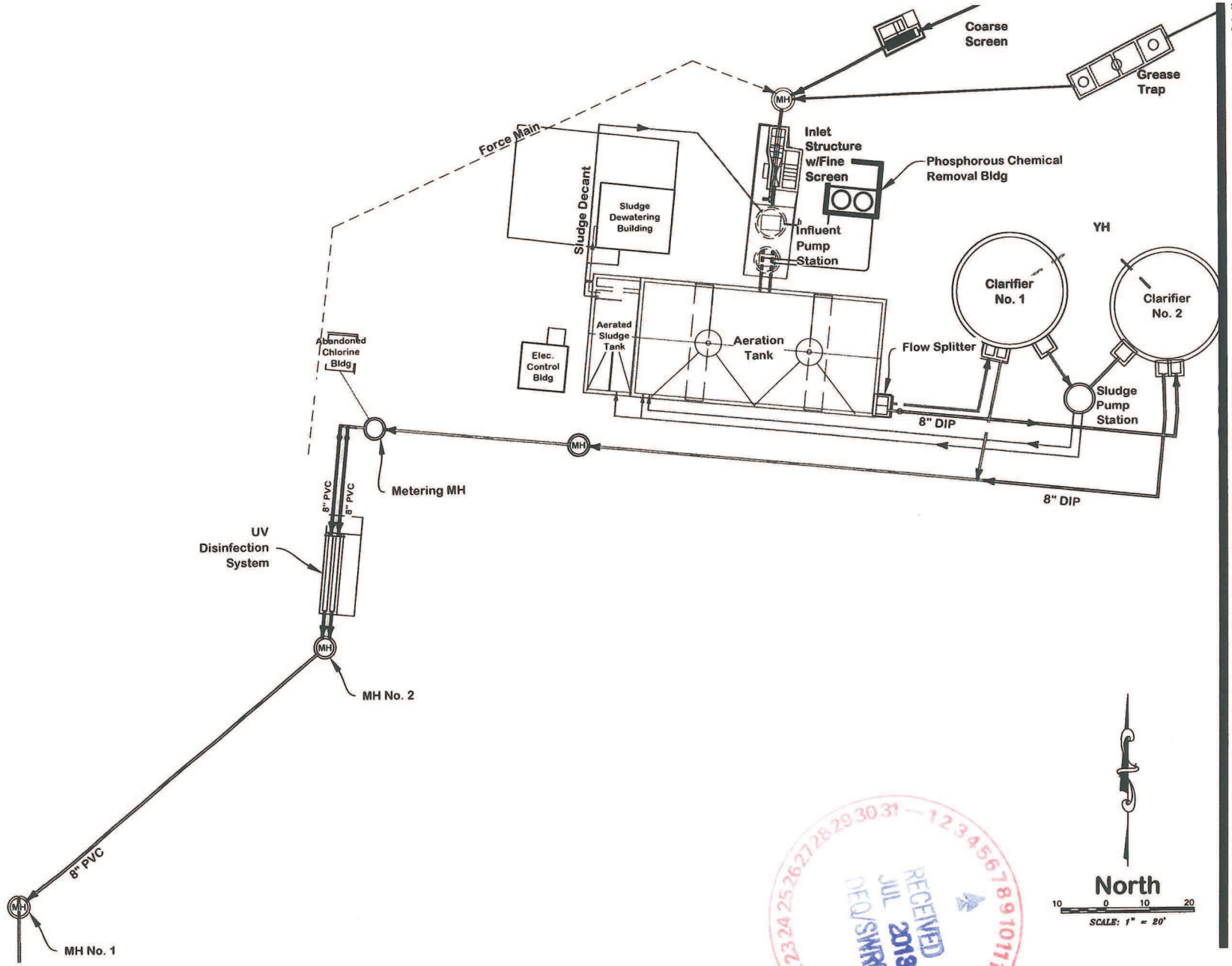
10.1 WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY:
A. Public supply (municipal or water district water) _____
If public, please give name of the public supply _____
B. Private well x
C. Surface water (lake, pond or stream) _____

10.2 Does your drinking water source serve at least 25 people at least 60 days per year (not necessarily consecutive days)?
☑ Yes ☐ No

10.3 Does your supply serve housing which is occupied year round by the same people? This does not include housing which is occupied seasonally? ☑ Yes ☐ No

11. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE WITH AREA CODE
Gary Claspill, Section Leader	(573) 751-3740
SIGNATURE	DATE SIGNED



STATE OF MISSOURI
JEREMIAH W. (JAY) NIXON, GOVERNOR

STATE OF MISSOURI
RICHARD D. McMILLIAN
NUMBER E-18813
REGISTERED PROFESSIONAL ENGINEER

07-05-2013

Richard D. McMillian, MO Engineer No. E-18813

WHITE RIVER ENGINEERING
600 W. College Street, Suite 104 • Springfield, Missouri 65806
(417) 862-3355 • Fax: (417) 862-7711 • www.whiterivereng.com
Missouri State Certificate of Authority No. 2004012957

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF CORRECTIONS

WASTEWATER TREATMENT IMPROVEMENTS

OZARK CORRECTIONAL CENTER

FORDLAND, MISSOURI

PROJECT # C0901-01
SITE # 2303
FACILITY # 26850; 26851; 26852

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 10/10/2010

CAD DWG FILE: X-002.DWG
DRAWN BY: TEH
CHECKED BY: RDM
DESIGNED BY: RDM

SHEET TITLE:
FLOW DIAGRAM
P-REMOVAL + CLARIFIER
+ UV DISINFECTION

SHEET NUMBER:
X-001

1 OF 1 SHEETS
07/05/2013

INSTRUCTIONS FOR COMPLETING FORM B
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE BASICALLY DOMESTIC WASTE
(Facilities over 100,000 gallons per day of domestic waste must use FORM B2)
(Facilities that receive wastes other than domestic must fill out FORM A and other forms as appropriate)

1. Check which parameter is applicable. **Do not check more than one item.** Construction and operating permit refer to permits issued by the Department of Natural Resources, Water Protection Program, Water Pollution Branch. Effective Sept. 1, 2008, a facility will be required to use ***Missouri's Antidegradation Rule And Implementation Procedure***. For more information, this document is available on the Web at www.dnr.mo.gov/env/wpp/docs/aip-cwc-appr-050708.pdf. This procedure will be applicable to new and expanded wastewater facilities and requires the proposed discharge to a water body to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified.

1.1 Self-explanatory.

1.2 An operating permit and antidegradation review public notice requires a Water Quality/Antidegradation Review Sheet to be submitted with the application (No fee required).

CONSTRUCTION PERMIT FEES (Please include fee with application.)

$750 for a sewage treatment facility with a design flow of less than 500,000 gallons per day, or gpd.

$2,200 for sewage treatment facility with a design flow of 500,000 gpd or more.

DOMESTIC OPERATING PERMIT FEES (Annual operating permit fees are based on flow and are due each year on the anniversary date of the permit.)

Annual fee/Design flow	Annual fee/Design flow	Annual Fee/Design flow
$100.....<5,000 gpd	$375.....10,000-10,999 gpd	$650.....16,000-16,999 gpd
$150.....5,000-5,999 gpd	$400.....11,000-11,999 gpd	$800.....17,000-19,999 gpd
$175.....6,000-6,999 gpd	$450.....12,000-12,999 gpd	$1,000.....20,000-22,999 gpd
$200.....7,000-7,999 gpd	$500.....13,000-13,999 gpd	$2,000.....23,000-24,999 gpd
$225.....8,000-8,999 gpd	$550.....14,000-14,999 gpd	$2,500.....25,000-29,999 gpd
$250.....9,000-9,999 gpd	$600.....15,000-15,999 gpd	$3,000.....30,000 gpd -1 mgd

New domestic wastewater treatment facilities must submit the annual fee with the original application.

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department on the anniversary date of the original permit. Permit fees must be current for the department to reissue the operating permit. Late fees of 2 percent per month are charged and added to outstanding annual fees.

PUBLIC SEWER SYSTEM OPERATING PERMIT FEES (City, Public Sewer District, Public Water District, or other publicly owned treatment works). Annual fee is based on number of service connections. The table of fees is in 10 CSR 20-6.011 and is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf. New Public Sewer System facilities should not submit any fee as the department will invoice the permittee.

OPERATING PERMIT MODIFICATIONS, including transfers, are subject to the following fees:

a. Municipals - $200 each
b. All others – 25 percent of annual fee

Note: Facility name or address changes where owner, operator and continuing authority remain the same are not considered transfers. Incomplete permit applications or related engineering documents will be returned by the department if they are not completed in the time frame established by the department in a comment letter to the owner. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.

2. If the facility has multiple outfalls, designate the outfall number and total number and use a separate form for each outfall. Name of Facility – The name by which is this facility locally known. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Give the street address or location of the facility. If the facility lacks a street name or route number, give the names of the closest intersection, highway, country road, etc.

2.1 Point of discharge should be given in terms of the legal description of the waste treatment plant. Sufficient information should be submitted that it may be located by department staff.

2.2 Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

2.3 Receiving stream(s) - Include the name of the stream or streams to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

3. Owner - Include the legal name and address of the owner.

3.1 Prior to submitting a permit to public notice, the Department of Natural Resources shall provide the permit applicant 10 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check yes to review the draft permit prior to public notice. Check no to waive the process and expedite the permit.

4. Continuing Authority – Include the permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf or contact the appropriate Department of Natural Resources Regional Office.

5. Operator - Provide the name, certificate number and telephone number of the operator of the facility.

6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.

INSTRUCTIONS FOR COMPLETING FORM B
APPLICATION FOR CONSTRUCTION OR OPERATING PERMITS FOR FACILITIES WHICH RECEIVE BASICALLY DOMESTIC WASTE
(CONTINUED)

7.1 Provide a brief description of the wastewater treatment facilities. Attach a 1"=2,000' scale U.S. Geological Survey topographic map showing location of all outfalls. This type of map is available on the Web at www.dnr.mo.gov/internetmapviewer/ or from the Department of Natural Resources' Division of Geology and Land Survey in Rolla, Missouri at 573-368-2125.

7.2 For Standard Industrial Codes, visit www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System at www.census.gov/naics or contact the appropriate Department of Natural Resources Regional Office. For example, a family style restaurant has a Facility SIC code of 5812 and a Facility NAICS code of 722210.

7.3 Indicate the total number of people presently served by the wastewater treatment facility. If this is a commercial establishment, indicate the number of employees and the number of guests or patrons served by the wastewater treatment facility on a daily basis.

7.4 Self-explanatory.

7.5 Include overflows of combined sewers and lift stations or bypassing of the wastewater treatment facility. Provide a detailed description of the circumstances that sewage bypassing occurs and the frequency of occurrence.

7.6 Self-explanatory.

7.7 Attach a list of industrial discharges into the system. For each industry, provide the name of facility, address, flow, type of industry/SIC code/ NAICS code and a list of the pollutants discharged by that industry into the collection system.

7.8 - 7.14 Self-explanatory.

8.1 A copy of 10 CSR 25 is available on the Web at www.sos.mo.gov/adrules/csr/current/10csr/10csr.asp#10-25 or at the Department of Natural Resources Regional Offices.

8.2 – 8.8 Self-explanatory.

8.9 Refer to University of Missouri Extension Environmental Quality publications about biosolids - numbers WQ420-426. Available on the Web at extension.missouri.edu/explore/envqual/. In addition, the federal sludge regulations are available through the U.S. Government Printing Office at www.gpoaccess.gov/cfr/index.html.

9. Provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way.

10. - 10.3 Self – explanatory.

Signature - All applications must be signed as follows and the signatures must be **original**:

a. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
b. For a partnership or sole proprietorship, by a general partner or the proprietor.
c. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

This completed form, along with the applicable permit fees, should be submitted to the appropriate Regional Office. Submittal of an incomplete application may result in the application being returned. Map of regional offices with addresses and phone numbers can be viewed on the web at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, please contact the appropriate Regional Office or the Department of Natural Resources, Water Protection Program, Water Pollution Branch, NPDES Permits and Engineering Section at 573-751-6825.